

Explosive and Flammable Operations Guidance

Explosive and Flammable Operations

During the due diligence review and the site investigation, any potential explosive and flammable materials and operations should be identified. This is accomplished by reviewing the information from the federal and state database searches discussed above, through reviewing an aerial photograph, or aerial map such as Google Earth, within a one mile radius of the project location, and observations made during field surveys. All projects involving a facility that may house or shelter individuals, or where people may congregate, must undergo an acceptable separation distance (ASD) analysis for any 100 gallon or larger above-ground storage tank (AST) containing substances of an explosive or fire prone nature found within the line of sight of the property or one mile from the project site, the search radius for ASD compliance. The facilities include, but are not limited to, emergency shelters, police stations, fire stations, parks, etc. The federal regulations requiring this analysis can be found in 24 CFR Part 58.5(i)(1) which requires compliance with Part 51, Subpart C. As stated in the regulations, an ASD is the distance at which an explosion or combustion of a hazardous material is not likely to cause damage or injury to a structure or individual. Underground storage tanks (UST) are exempt from ASD analysis. Additionally, use of underground natural gas utility lines is exempt from ASD analysis.

The ASD rule also applies when a proposed project introduces an explosive or flammable hazard to the surrounding area. In accordance with 24 CFR 51.204, projects shall ensure that hazardous facilities being installed are located at an ASD from residences and from any other facility or area where people may congregate or be subject to the hazard. The most common occurrence of this would be when installing generators at various locations within a city, such as lift stations, water and wastewater treatment plants, community centers or shelters, schools, police stations, and fire stations. If a generator is being installed at a community center, police or fire station, or a lift station or treatment plant with residential houses, or areas where people congregate (such as playgrounds, outdoor recreation areas, balconies, or residential parking lots), adjacent to the site, coordination with the engineer will be required to determine the following information:

- What fuel type will the generator use?
- Will an AST be installed with the generator?
- If an AST will be installed, what size will the tank be?

If the generator will be diesel or propane powered and an above ground storage tank more than 100 gallons will be installed with the generator, ASD compliance is required. An exception will be made if the new generator and associated AST are being installed at a location that already contains an explosive or flammable hazard. If the explosive hazard already exists to the surrounding residents, the new hazard would not be required to undergo an ASD analysis.

While the ASD regulation may not be applicable to all projects, the presence of explosive and flammable operations should still be noted in the ERR and a determination made regarding the potential of the explosive/flammable operation to impact the proposed project. The field observation report (**Attachment A**) should also contain information regarding ASTs that were noted within the line of sight of the property during the field visit.

If an AST is found within the line of sight or within one mile of a project, and the project is a location that is a facility that may house or shelter people, then the ASD regulation applies and the ASD should be calculated. Additionally, if the proposed project is introducing an explosive or flammable hazard to surrounding residents, a community center or shelter, a police or fire station, or a school, then the ASD regulation applies and the ASD should be calculated. HUD has developed an ASD Electronic Assessment tool, which is available online:

(http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/environment/asdcalculator).

The ASD tool requires several pieces of information to be entered in order to calculate how far buildings and individuals must be from the posed hazard. The required information which should be noted while in the field and during the due diligence search includes the following:

- Whether the container is above or below ground;
- If the container is under pressure;

- What the container holds;
- If the container is diked;
- The volume (in gallons) of the container; and,
- If the container is diked, the diked area length and width in feet.

The ASD assessment tool will calculate the acceptable distance after all needed information has been entered. The ESP must then determine if the project will be within the HUD standards of blast overpressure (0.5 psi – buildings), thermal radiation for people (450 BTU/ft² – hr), and thermal radiation for buildings (10,000 BTU/ft² – hr). Safety standards are included in §51.203 and should be reviewed to determine the proper recommendation in each situation. If a facility is not within an acceptable distance of the hazard, mitigation measures must be taken. Mitigation can include installing or incorporating man-made or natural barriers, burying the storage tank, or revising the site plan or building design to increase the distance between the facility and the hazard. Guidance on mitigation can be found at the following link: http://www.hud.gov/offices/cpd/environment/hazards_mitigation_options.pdf.

Per HUD's ASD Guidebook, the Regulation at §51.204 does not apply to the protection of the proposed HUD-assisted industrial facility from the facility's own tanks. The Department's interpretation of this guidance means that the installation of an AST, with explosive and/or flammable contents, in excess of 100 gallons does not require ASD for the facility where the explosive and/or flammable fuel source will be installed; however, the Department shall ensure that the hazardous installation is located at an acceptable distance from residences and from any other facility or area where people may congregate.

Should the ESP determine mitigation measures are needed, contact with the project engineer, GLO and the PMC should be initiated. The project engineers are responsible for including provisions for mitigation in the bid package and these measures should be documented in the ERR.

Field Observation Report

Project Name: _____

ERR #: _____

Date of Field Visit: _____

General Information

County	
City	
GPS Site Location	

Ecological Site Information

General site description (residential, commercial, forested, grassland, etc.):

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Water bodies present? If yes, describe (pond, lake, creek, river, wetland, etc.):

--

Special or unique vegetation features?

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Special wildlife habitat?

--

Observed wildlife:

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National, state, or locally designated park or natural reserve at, or adjacent to, project site?

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Hazardous Material Issues

Yes/No	Does the project include any of the following activities (indicate all that apply)?
	Structure demolition operations or structure modifications.
	If yes, is there potential for the building to contain asbestos or lead-based paint?
	Pipeline and underground utility installation or adjustments.
	De-watering.
	Purchase of new ROW or easement.
	Trenching, drilled shafts, cuts or other excavations.

Project Site Survey

(Yes/No)	Specific concerns identified on, or adjacent to, project area:
	aboveground storage tanks
	underground storage tanks
	vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground

	electrical and transformer equipment
	If yes, are there signs of leaking transformers oil (PCBs) on the ground?
	injection wells, cisterns, sumps, dry wells flooring, drains, or walls stained by substances other than water or emitting foul odors
	vats, 55-gallon drums (labeled/unlabeled), canisters, barrels, bottles, etc.
	surface dumping of trash, garbage, refuse, rubbish, debris half exposed/buried, landfill, stockpiling, storage, etc.
	damaged or discarded automotive or industrial batteries
	stained, discolored, barren, exposed or foreign (fill) soil
	dead, damaged or stressed vegetation
	oil sheen or films on surface water, seeps, lagoons, ponds, or drainage basins
	pits, ponds, or lagoons associated with waste treatment or waste disposal
	changes in drainage patterns from possible fill areas
	security fencing, protected areas, placards, warning signs
	dead animals possibly due to contamination
	other concerns (<i>Describe below</i>):
Miscellaneous Observations	
(Yes/No)	Other compliance factors identified on, or adjacent to, project area:
	Historic age buildings
	Refineries
	Airports, runway strips
	Educational facilities
	Commercial facilities
	Healthcare facilities
	Social services facilities

Describe any “Yes” answers indicated above:

Any additional information:

{Signature of field investigator}
 Name of Site Investigator
 Title
 Company

 Date